



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/649,476	08/26/2003	Huang Yongji	966.5	5380

22497 7590 11/16/2006

LARSON AND LARSON
11199 69TH STREET NORTH
LARGO, FL 33773

EXAMINER

LEE, JOHN J

ART UNIT PAPER NUMBER

2618

DATE MAILED: 11/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/649,476	Applicant(s) YONGJI ET AL.	
	Examiner JOHN J. LEE	Art Unit 2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 August 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-13 is/are allowed.
- 6) ☒ Claim(s) 14,15,17 and 19 is/are rejected.
- 7) ☒ Claim(s) 16,18 and 20 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 August 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Applicant's arguments with respect to claims 14, 15, 17, and 19 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. **Claims 14, 15, 17, and 19** are rejected under 35 U.S.C. 103(a) as being unpatentable over Brochardt et al. (US 6,215,981) in view of Svensson et al. (US 2004/0053596).

Regarding **claim 14**, Brochardt teaches that a system for transmitting a modulated RF carrier audio signal from a base to a receiver unit (abstract and column 3, lines 1 – 61), the base unit including a pair of audio input connections coupled to a transmitting circuit having an antenna (column 6, lines 29 – 34, Fig. 6, 7, and column 7, lines 28 – 65), the pair of audio input connections receiving left and right audio signals from an audio source amplification device (reads on volume control, column 6, lines 29 – 34, Fig. 6, 7, and column 7, lines 28 – 65). Brochardt teaches that a receiver circuit enclosed within the receiver unit coupled to pair electroacoustic transducers for receiving the modulated RF carrier audio signal (abstract, Fig. 1, 7A, and column 15, lines 42 – 53, where teaches the receiver coupled to electroacoustic transducers of the headphone) and

downconverting said signal once to a second signal reproducible by the electrostatic transducers without the need of an intermediate carrier signal (abstract, Fig. 1, 7A, and column 3, lines 62 – column 4, lines 53, where teaches the signal is downconverted to an audible signal one time and the frequency modulation receiver means for receiving the downconverted frequency modulated radio signals (only high frequency signal and low frequency signal) and reproducing the audio signals (without an intermediate carrier signal cause only high frequency signal and low frequency signal) and supplying the reproduced audio signals from the frequency modulation receiver means to the electrostatic transducers). Brochardt teaches that the receiver circuit having an antenna for receiving the modulated RF carrier audio signal (column 4, lines 4 – 7 and Fig. 1, 7), a single downconverter (reads on downconversion means, column 4, lines 4 – 7 and Fig. 1, 7) and a control circuit (reads on volume control, column 15, lines 42 – 53 and Fig. 7).

Brochardt does not specifically disclose the limitation “radio receiver in which the received carrier signal is downconverted without the need of an intermediate carrier signal”. However, Svensson teaches the limitation “radio receiver in which the received carrier signal is downconverted without the need of an intermediate carrier signal” (pages 1, paragraphs 3 and Fig. 1, where teaches receiver circuit is the direct conversion, radio receiver in which the received carrier signal is downconverted without the need of an intermediate carrier signal). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the Brochardt taught by Svensson, provide the motivation to achieve efficient design of receiver circuit in communication receiver.

Regarding **claim 15**, Brochardt teaches that frequency mixer, a local oscillator, and a phase lock loop circuit (elements 258, 268, and 270 in Fig. 7B).

Regarding **claim 17**, Brochardt teaches that the local oscillator, controlled by the phase lock loop circuit, produces a desired tunable frequency signal which is subsequently directed to the downconverter frequency mixer (column 15 lines 17-26 and Fig. 7B).

Regarding **claim 19**, Brochardt teaches all the limitation as discussed in claims 14 and 15. Furthermore, Brochardt further teaches that the receiver circuit control circuit produces a stable frequency signal which is used by the phase lock loop circuit as a reference frequency signal for the downconverter local oscillator (See element Vref of figure 7B which goes to element 270 (VCO) and column 14, lines 44 – column 15, lines 62).

Allowable Subject Matter

4. Claims 1-13 are allowed.

Claims 1-13 are allowable over the prior art of record because a search does not detect the combined claimed elements as set forth in the claims 1-13.

As recited in independent claim 1, none of the prior art of record teaches or fairly suggests that a system for transmitting a modulated RF carrier audio signal from a base unit to a receiver unit, comprises the audio signal processing circuit, the micro control unit of the transmitter second circuit sending a control signal to the transmitter first circuit for choosing the RF carrier signal to be transmitted, the power supply circuit and

charge circuit of the transmitter third circuit supplying a DC voltage to the transmitter, the first antenna transmitting the modulated RF carrier audio signal in the 900MHz range to the receiver, a receiver circuit coupled to the pair of electroacoustic transducers enclosed therewithin and having a second antenna coupled to an input network, a UHF module, a filtering network, a control unit and an audio amplifier, and the UHF module of the receiver circuit downconverting the modulated RF carrier audio signal in the range of 900 MHz to an audio signal which is reproducible by the receiver unit electroacoustic transducers through audio amplification, said downconverting occurring only once and not requiring an intermediate carrier frequency, and together with combination of other element as set forth in the claims 1-13. Therefore, claims 1-13 are allowable over the prior art of records.

5. Claims 16, 18, and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The prior art of record fails to disclose “the once downconverted second signal reproducible by the electroacoustic transducers is 10.7MHz, the desired tunable frequency signal is locked in reaction to the phase lock loop circuit receiving a feedback signal from the local oscillator and creating an error voltage, and the reference frequency signal is adjustable by the receiver circuit control circuit to a desired tunable frequency signal, the desired tunable frequency signal enabling the local oscillator frequency signal to be matched with the modulated RF carrier audio signal in the downconverter mixer to

Art Unit: 2618

produce the second signal reproducible by the electroacoustic transducers” as specified in the claims.

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Vu et al. (US 6,002,925) discloses Radio Frequency Transceiver and Subassemblies Thereof.

Seppinen et al. (US 2003/0122534) discloses Intermodulation Detector for a Radio Receiver.

Information regarding...Patent Application Information Retrieval (PAIR) system... at 866-217-9197 (toll-free)."

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231
Or P.O. Box 1450
Alexandria VA 22313

or faxed (571) 273-8300, (for formal communications intended for entry)

Or: (703) 308-6606 (for informal or draft communications, please label "PROPOSED" or "DRAFT").

Hand-delivered responses should be brought to USPTO Headquarters, Alexandria, VA.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **John J. Lee** whose telephone number is **(571) 272-7880**. He can normally be reached Monday-Thursday and alternate Fridays from 8:30am-5:00 pm. If attempts to reach the examiner are unsuccessful, the examiner's supervisor,

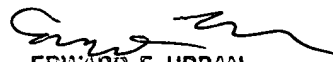
Art Unit: 2618

Edward Urban, can be reached on (571) 272-7899. Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-4700.

J.L

November 11, 2006

John J Lee


EDWARD F. URBAN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600